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# Review of Palearctic species of *Crepidodera* Chevrolat

(Coleoptera, Chrysomelidae, Alticinae)

By Alexander S. Konstantinov

Konstantinov, A. S. (1996): Review of Palearctic species of *Crepidodera* Chevrolat (Coleoptera, Chrysomelidae, Alticinae). – *Spixiana* 19/1: 21–37

Morphological characteristics of the genus are provided. Species status of two forms are re-established. Illustrations of the morphological characters of the genus, and female and male genitalia of species are provided. A key for identification of the 15 Palearctic *Crepidodera* species is presented. Two new species of *Crepidodera* are described: *C. sahalinensis* (type locality environs of Gorno-avodsk, Sahalin, Russia), *C. ussuriensis* (type locality Kamenushka, Ussuriisk distr., Far East, Russia).

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## Introduction

The genus *Crepidodera* Chevrolat is less species-rich than most cosmopolitan Alticinae genera. The greatest diversity (31 species) is found in the Holarctic, while a single species is known from the Oriental region (Heikertinger & Csiki 1939). The Oceanic Islands are disproportionately represented, with 15 species recognized in the revision of Samuelson (1973). The Neotropical fauna, probably the most poorly known, contains only 14 species according to Bechyne (1955) and Arnett (1983). The Nearctic fauna has received the greatest attention from systematists: Lazorko (1974) and Parry (1986) recounted 16 species, 11 of them new. The last author created a key for identification Nearctic species, and re-established the species status for *C. nana* Say. For the Palearctic fauna after a single revision of Heikertinger (1950), 3 new species were described (Gressitt & Kimoto 1963, Warchalowski 1969, Doguet 1976a). Doguet (1976b) examined the type of *C. picipes* Weise. After this study it became clear that Gressitt & Kimoto (1963) and Warchalowski (1969) were mistaken in their concept of *C. picipes* Weise, and A. Warchalowski (1969) had redescribed Weise's species under the name of *mroczkowskii*.

In the Holarctic, *Crepidodera* commonly feeds on trees and bushes of *Salix*, *Populus* and *Prunus*; thus its greatest diversity occurs in lowland and lower montane forest habitats. Some species (*C. nana* Say in North America and *C. fulvicornis* F. in Eurasia) may occur in sufficient numbers to cause significant damage to willows.

The present study was based on material from the collection of Zoological Institute RAS in St. Petersburg (ZMAS), Zoological Museum of Moscow University in Moscow (ZMMU), Institute of Evolutionary Morphology and Ecology of Animals RAS in Moscow (IMEA), Zoological Museum of Byelorussian University (ZMBU), Institute of Zoology Ukrainian, in Kiev (IZAB) Academy of sciences, National Museum of Natural History, Washington (USNM), Natural History Museum in Basel (NHBM) and on the private collection of I. K. Lopatin in Minsk (ILPM), S. Doguet in Paris (SDCF), M. Biondi in Rome (MBCI), and the author (AKPM).

## Morphology of *Crepidodera*

The boundary between *Crepidodera* and closely related genera in the Palearctic is clear, but in the Neotropical fauna the distinction is much more obscure. Even in North America some species exist (*C. longula* Horn for example) which lose their metallic color and come to resemble species of *Asiolestia* Jacobson. Therefore a short morphological characterization of Holarctic *Crepidodera* is provided. Only key diagnostic characters are included (Konstantinov & Lopatin 1987).

The head capsule (Figs 1-3) has a rounded and slightly elongate shape. The frontal ridge is narrow and sharp. It forms an inverted T-shaped ridge with the clypeus. There are two furrows for reception of the first antennal segments between the antennal cavities and lateral margin of the mouth. Antennal calli are narrow, contiguous and separated from the top of the frontal ridge. The most important character of the head capsule of *Crepidodera* is the absence of the hypostomal suture.

The mouthparts (Figs 4-7). The labrum has a characteristic alticine shape and 6 setiferous pores on the dorsal surface. The mandibles have 5 teeth and wide prosteca, covered with numerous short setae. The maxillae have unusual basistipes with two appendages bearing long setae. This type of basistipes is nearly unique among Palearctic genera. Only the basistipes of *Podagrica* Foud. has a similar shape. The labium has a very small first segment of the labial palpi and greatly enlarged second one.

The pronotum (Figs 8-21) has a deep transverse impression near the basal margin, bounded on either side by short, longitudinally impressed lines. Meso- and metanotum are as in figs. 22 and 23.

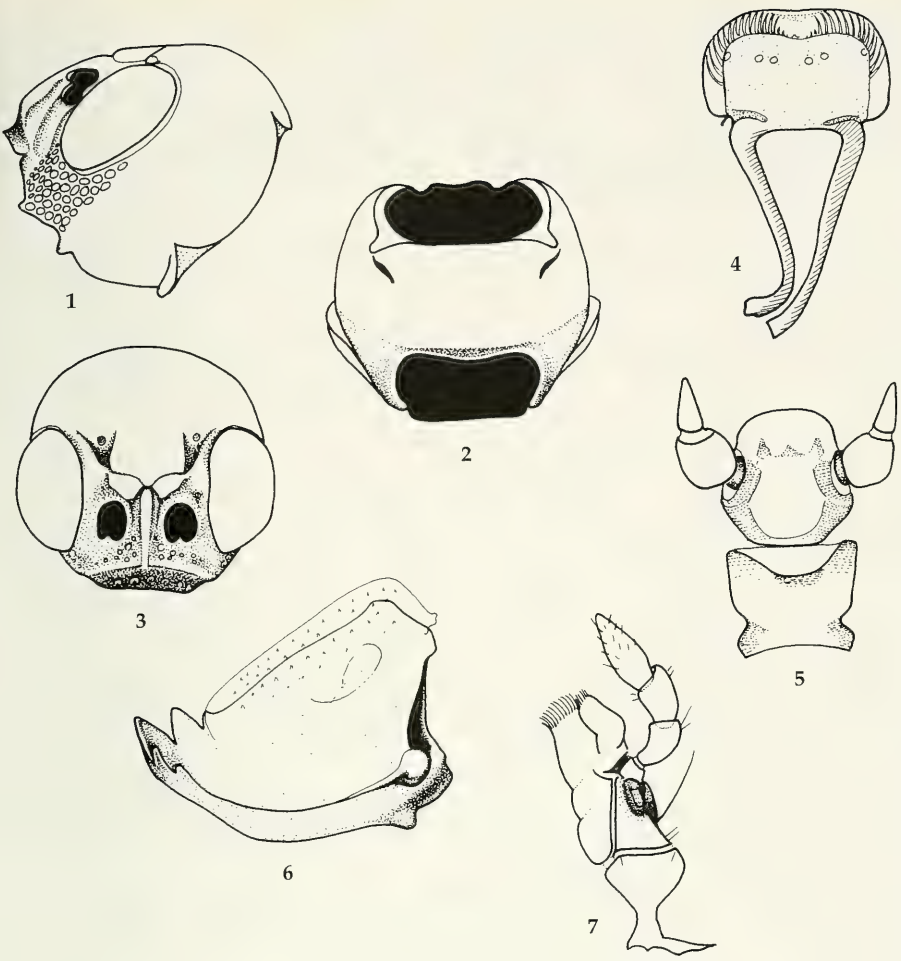
The metendosternite (furca) (Figs 24-26) is very similar to the metendosternite ancestral for Alticinae (Konstantinov & Lopatin 1987) but differs in the shape of the stem. The stem of *Crepidodera* has a wide base with parallel sides in basal  $\frac{2}{3}$ , tapering in apical  $\frac{1}{3}$  near the branches.

The female genitalia (Figs 27-47) also has a form which is considered primitive among Palearctic Alticinae. The 7th tergite and sternite are strongly sclerotized and covered with many ridges (Figs 27, 28). The most primitive feature is the presence of the 9th tergite. However Cryptocephalinae and the majority of Chrysomelinae have lost this segment (Konstantinov & Rusakov 1993). Sternites 8 and 9 are modified to form a tignum (Fig. 29) and styli (Figs 30-34). The most important feature of the *Crepidodera* tignum is two dilations, basal and distal. The distal one is Y-shaped. The size and the shape of styli are different in each species, but the value of this structure for species identification needs verification. The spermatheca (Figs 35-47) of the majority of Holarctic species has a distinct border between apical and basal parts. There is no such border in the spermatheca of *C. lamina* Bedel and *C. aurea* Geoff. which exhibit the primitive condition found in *Altica* F.

The male genitalia (Figs 48-60) contains useful distinguishing features for identification of species.

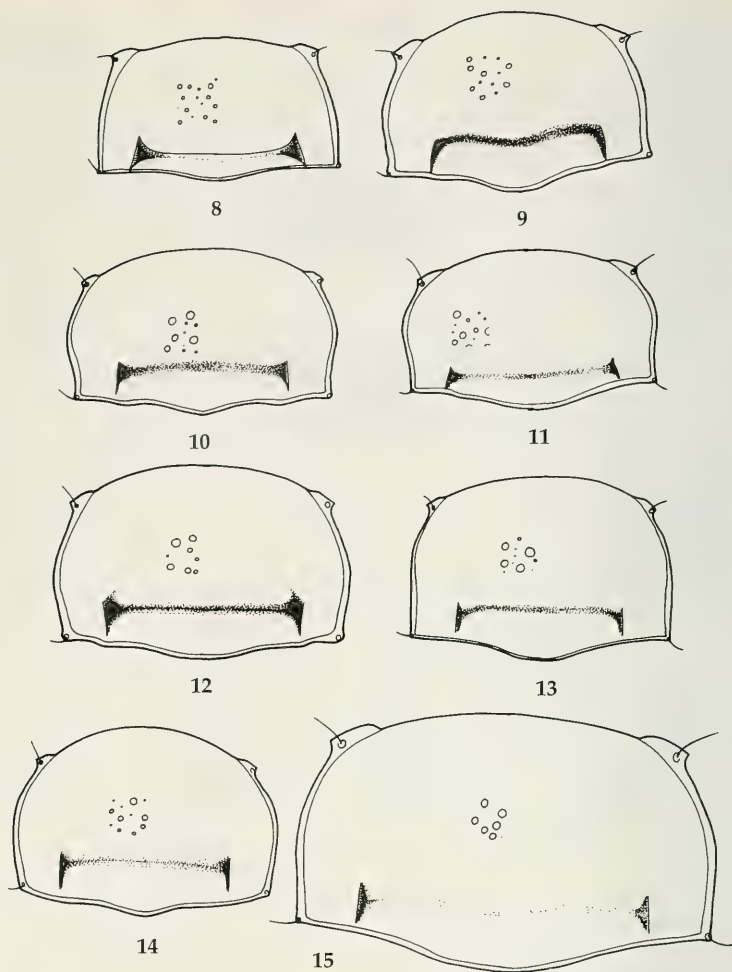
### Key for the Palearctic species of *Crepidodera* Chevr.

1. Apical angles of elytra with small tooth. Punctural rows of elytra irregular on disc ..... *C. nitidula* L.  
– Apical angles of elytra without tooth. Punctural rows of elytra regular on disc ..... 2.
2. First and second antennal segments yellow ..... 3.  
– Antennal segments 1 and 2 light brown ..... 13.
3. Antennae entirely yellow, except 3 apical segments brown ..... 4.  
– Antennal segments 3-6 brown, 3 apical segments dark brown ..... 6.
4. Frons densely covered with transverse wrinkles. Anterior pronotal angles rounded. Pronotal punctures large, subequal in size ..... *C. gemmata* Ab.  
– Frons without wrinkles. Anterior pronotal angles sharp. Pronotum covered with different sized punctures ..... 5.
5. Frons smooth, shiny, covered with small punctures ..... *C. lamina* Bed.  
– Frons dull, covered with large punctures, some of them irregularly shaped ..... *C. aurea* Geoffr.
6. ♂ Antennal segment 5 bicolorous: base yellow, apex dark brown or black ..... 7.  
– Antennal segment 5 unicolourous yellow, or with apex slightly darker than base ..... 8.



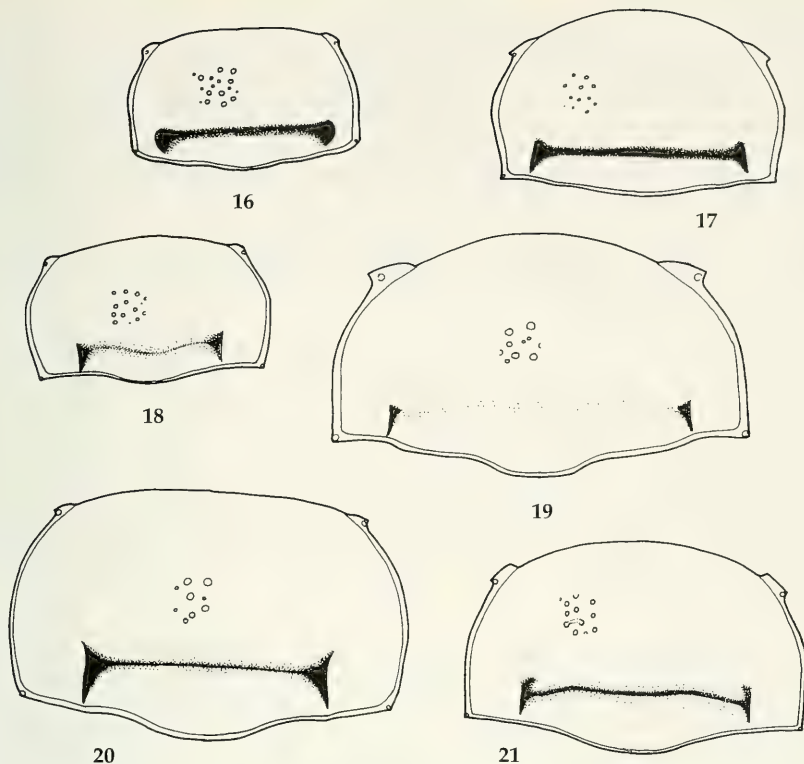
Figs 1-3. Head capsule of *Crepidodera lamina* Bed. 1. Lateral view. 2. Dorsal view. 3. Frontal view.  
 Figs 4-7. Mouth parts of *C. lamina* Bed. 4. Labrum. 5. Labium. 6. Mandible. 7. Maxilla.

- 7. Pro-, meso- and metafemur dark at middle, transverse and longitudinal furrows deep with sharp margins ..... *C. sahalinensis*, spec. nov.
- Pro-, meso- and metafemora yellow, transverse and longitudinal furrows deep without sharp margins ..... *C. plutus* Latr.
- 8. Dorsum bicolorous: head and pronotum golden green or copper red, elytra dark green, blue or violet ..... 9.
- Dorsum unicolorous, or pronotum differs from elytra by weak copper lustre ..... 10.
- 9. Metafemur black. Aedeagus with round apex ..... *C. aurata* Marsh.
- Metafemur light brown. Aedeagus with sharp apex ..... *C. nigricoxis* All.
- 10. Pro- and mesofemur yellow ..... *C. fulvicornis* F.
- At least mesofemur brown or black ..... 11.



Figs 8-15. Pronotum of *Crepidodera*, dorsal view. 98. *C. aurea* Geoffr. 9. *C. obscuripes* Heik. 10. *C. fulvicornis* F. 11. *C. japonica* Baly. 12. *C. aurata* Marsh. 13. *C. plutus* Latr. 14. *C. sahalinensis*, spec. nov. 15. *C. lamina* Bed.

- 11. Dorsum dark blue or dark green. Body wide ..... 12.
- Dorsum light green or copper bronze. Body narrow ..... *C. japonica* Baly
- 12. Pronotum with lateral margin straight at basal  $\frac{1}{3}$ . Middle of frons without punctures .....  
..... *C. wittmeri* Doguet
- Pronotum with lateral margin curved at basal  $\frac{1}{3}$ , middle of frons with round densely punctate  
impression ..... *C. obscuripes* Heik.
- 13. Legs dark brown or black ..... *C. picipes* Weise
- Pro- and mesotibia yellow ..... 14.
- 14. Length more than 4 mm. Body bright metallic green ..... *C. viridis* Gr. & Kim.
- Length less than 3 mm. Body dark blue ..... *C. ussuriensis*, spec. nov.



Figs 16-21. Pronotum of *Crepidodera*, dorsal view. 16. *C. gemmata* Abeil. 17. *C. picipes* Wse. 18. *C. ussuriensis*, spec. nov. 19. *C. viridis* Gr. & Kim. 20. *C. nitidula* L. 21. *C. wittmeri* Doguet.

## Survey of the Palearctic species of *Crepidodera* Chevrolat

### Genus *Crepidodera* Chevrolat

*Crepidodera* Chevrolat, 1837: 415; Maulik 1926: 234; Gressitt & Kimito 1963: 773.

*Chalcoides* Foudras, 1859 (1860): 147; Heikertinger 1950: 106; Mohr 1966: 247.

Type species: *Chrysomela nitidula* L., designated by Maulik, 1926: 234.

### *Crepidodera aurea* (Geoffroy)

Figs 8, 22, 23, 24, 35, 48

*Alica aurea* Geoffroy, 1785: 100.

*Chalcoides aurea*, Bedel 1901: 298; Heikertinger 1950: 110; Shapiro 1965: 451; Mohr 1966: 248; Gruév & Tomov 1986: 270. *Crepidodera aurea*, Lopatin 1979: 227.

Material. England, Ongar, 29.05.1949, F. D. Buck (USNM); Germany, Bayerischer Wald, 19.05.1967, M. Döberl (USNM); Austria, Wien, 25.08.1905, F. Heikertinger (USNM); Russia: Kodyma, 08.06.1902, Bazhenov (ZMAS); Podol'sk, Verhovka, 26.05.1921, Chekini (ZMAS); Kursk distr., Golubkino, 17.05.1898, Lindeman (ZMAS); Ukraine: Crimea, Pendzhikul-Ugan-Su, 22.05.1932, Reihardt (ZMAS); Georgia: Akhaldaba, 12.07.1983, A. Konstantinov (ZMBU).

## Redescription

Body wide, oval. Dorsal surface cupreous, green, dark-blue or violet with bronze lustre, pronotum and elytra concolorous. Antenna, with exception of last 3 segments, front and middle legs, metatibiae and all tarsi yellow. Last 3 antennal segments and metafemora brown. Antennal calli transverse, well separated from frons. Frons mat, covered with large punctures. Pronotum wide, transverse; longitudinal furrows shallow. Posterior angles acute with deep setiferous pores. Punctures comparatively small. Elytra with regular rows of small punctures. Diameter of punctures less than distances between rows. Intervals between rows shiny, minutely punctured.

Length: 2.5-3.8 mm.

Distribution: Europe, Caucasus, Asia Minor North and East Kazakhstan, West Siberia.

Host plants: *Salix caprea*, *Populus tremula*, *P. nigra*.

### *Crepidodera obscuripes* (Heikertinger)

Figs 9, 33, 36, 49

*Chalcoides obscuripes* Heikertinger, 1912: 104.

*Chalcoides aurea obscuripes*, Heikertinger 1950: 111; Medvedev 1992: 586.

*Crepidodera picipes*, Gressitt & Kimoto 1963: 773; Warchalowski 1969: 231 (misidentification).

Material. Siberia: Krasnojarsk, 1900, Sahberg (ZMAS); Odarikovskii zavod, 5.08., A. Cherskii (ZMAS); Primorskii krai, Evseevka, 01.05.1910, W. Shingarev (ZMAS); Ussuriiskii krai, Jakovlevka, 18.05.1926, Diakonov, Filip'ev (ZMAS); Far East, Barabash-Levada, 26.07.1972, Konovalov (ZMBU); Dichun, 22.06.1978, Konovalov (ZMBU).

## Redescription

Body suboval, wide. Dorsal surface dark-blue or violet, shiny. Pronotum and elytra concolorous. Pro- and mesotibia, tarsi and 4 or 5 basal antennal segments yellow. Metafemur and metatibia dark brown. Pro- and mesofemur dark yellow to brown. Antennal calli well separated from frons. Frons mat, with small and shallow transverse furrow covered with punctures. Pronotum wide with deep transverse and longitudinal furrows. Basal  $\frac{1}{3}$  of lateral margin slightly concave. Posterior angles acute. Elytra with quite striae rows. Punctures of striae comparatively large, diameter of a puncture almost equal to distance between rows. Intervals covered with small wrinkles and minute punctures.

Length: 2.6-3.7 mm.

Distribution: East Siberia, Far East, Mongolia, Korea, China.

Host plants: *Salix* sp.

Comments. Heikertinger (1950) regarded this species as a subspecies of *C. aurea* Geoffr., but it has unique form of aedeagus, and may also be separated from *C. aurea* by the punctuation and form of the frons, and by the shape of the lateral pronotal margin. Gressitt & Kimoto (1963) mentioned this species from China under the name of *picipes*, but *C. aurea* and *C. picipes* differ in the form of the aedeagus and may be easily separated using this character.

### *Crepidodera fulvicornis* (Fabricius)

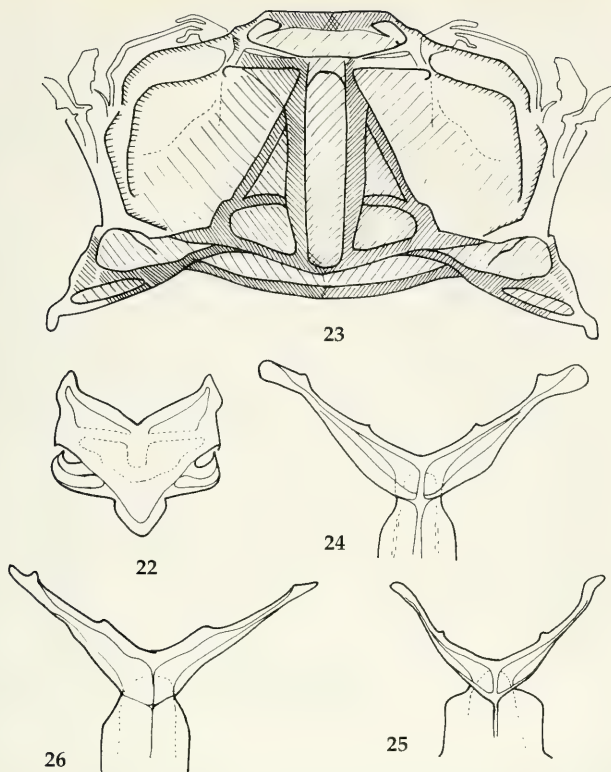
Figs 10, 25, 37, 50

*Galeruca fulvicornis* Fabricius, 1792: 30.

*Chalcoides fulvicornis*, Heikertinger & Csiki 1939: 317; Shapiro 1965: 451; Mohr 1966: 248; Gruев & Tomov 1986: 271.

*Crepidodera fulvicornis*, Lopatin 1979: 226; Medvedev 1982: 276.

Material. England: Gloucester, 24.08.1966, (USNM); Germany: Württemberg, 10.06.1979, M. Döberl (USNM); Bayerischer Wald, 19.05.1967, M. Döberl (USNM); Byelorussia: Minsk, 05.05.1985, I. Lopatin (ILPM); Braslov, 06.07.1981, A. Konstantinov (AKPM); Turov, 11.05.1980, A. Konstantinov (ZMBU); Russia: Leningrad, 12.06.1953 (ZMAS); Murmansk, 05.1921 (ZMAS); Arhangelsk distr., 12.08.1967 (ZMMU); Smolensk distr., 12.08.1979 A. Konstantinov (AKPM); the same place, 08.-22.08.1980 A. Konstantinov (AKPM); Moscow distr., V, VI, (ZMAS);



Figs 22, 23. Thorax of *C. aurea* Geoffr. 22. Mesonotum. 23. Metanotum.  
 Figs 24-26. Metendosternite of *Crepidodera*. 24. *C. aurea* Geoffr. 25. *C. fulvicornis* F. 26. *C. lamina* Bed.

Perm distr., Kamenka, 28.05.1965 (ZMAS); Lysvinskii reg., 23.05.1963 (ZMAS); Caucasus: North Caucasus, 12.06.1960 (IMEA); Tuapse, 11.06.1981, A. Konstantinov (AKPM); Krasnaia Poliana, 23.06.1981; the same place, 14.06.1984, A. Konstantinov (ZMBU); Lagonaki, 29.06.1990, A. Konstantinov (ZMBU); Abhasia, Suhumi, 24.06.1984, A. Konstantinov (AKPM); Pitzunda, 03.08.1983, A. Konstantinov (AKPB); Georgia, Ahaldaba, 22.07.1983 (ZMBU); Bakuriani, 15.07.1983, A. Konstantinov (ZMBU); Borzhomi, 14.07.1983, A. Konstantinov (AKPM).

### Redescription

Body elongate. Dorsal surface bronze, metallic green or dark blue. Sometimes pronotum and elytra differently colored. Front and middle legs, metatibia and all tarsi, first 5 antennal segments yellow. Metafemur and last 6 antennal segments brown. Frons covered with comparatively large punctures above antennal calli. Frons surface shiny, with few irregular, shallow excavations. Pronotum with deep transverse furrow, but longitudinal ones more shallow. Lateral sides of pronotum concave in basal  $\frac{1}{3}$ . Surface covered with very large, irregularly placed punctures with small punctures scattered between large ones. Elytra with regular rows of comparatively small punctures. Their diameter slightly smaller than the distances between punctures. Intervals shiny and covered with small punctures.

Length: 2.0-3.1 mm.

Distribution: Europe, Caucasus, Asia Minor, North Kazakhstan, Siberia.

Host plants: *Salix caprea*, *S. alba*, *Populus tremula*, *P. nigra*.

## *Crepidodera japonica* Baly

Figs 11, 38, 51

*Crepidodera japonica* Baly, 1877: 169; Kimoto 1965: 425.

*Crepidodera fulvicornis*, Medvedev 1992: 586.

Material. Sahalin, 8.-10.07.1985, S. Saluk (AKPM); Sahalin, Chehov, 07.08.1992, A. Konstantinov (AKPM); Gornozavodsk, 12.08.1992, A. Konstantinov (AKPM); Kurilian Islands, Kunashir, 15.07.1985, S. Saluk (ZMBU); Japan: Hokaido, Jozakei, 07.08.1952 (USNM); Kuo Honshu, 25.08.1931 (USNM).

### Redescription

Body elongate, comparatively small. Dorsal surface metallic green. Pronotum of some specimens with bronze lustre. Metafemur black; first 4 antennal segments yellow, rest dark brown. Remaining parts of legs variable in color: pro- and mesofemora, metatibiae brown to black. Pro- and mesotibiae yellow to dark brown. Antennal calli wide at base. Frons covered with small transverse wrinkles. Pronotum with deep longitudinal furrows, transverse furrow shallow. Lateral sides concave in basal  $\frac{1}{3}$ . Posterior angles acute. Pronotal surface covered with punctures of different sizes. Largest punctures close. Striae of elytra completely mixed at the apex.

Length: 2.1-2.8 mm.

Distribution: Russian Far East (Sahalin), Japan (Hokaido, Honshu).

Host plants: *Salix gracilistula*, *S. sachalinensis*, *S. subfragilis*.

Comments. Gressitt & Kimoto (1963) and Medvedev (1992) considered this species a synonym of *C. fulvicornis*. However the legs' color, shape and punctuation of pronotum, wrinkles of frons and shape of aedeagus prove that this is a valid species.

## *Crepidodera aurata* (Marsham)

Figs 12, 39, 52

*Chrysomela aurata* Marsham, 1802: 195.

*Chalcoides aurata*, Heikertinger & Csiki 1939: 314; Shapiro 1965: 452; Mohr 1966: 248; Gruev & Tomov 1986: 272.

*Crepidodera aurata*, Gressitt & Kimoto 1963: 713; Lopatin 1979: 226; Medvedev 1982: 276.

*Crepidodera aureola* Foudras, ???; Biondi 1990: 166.

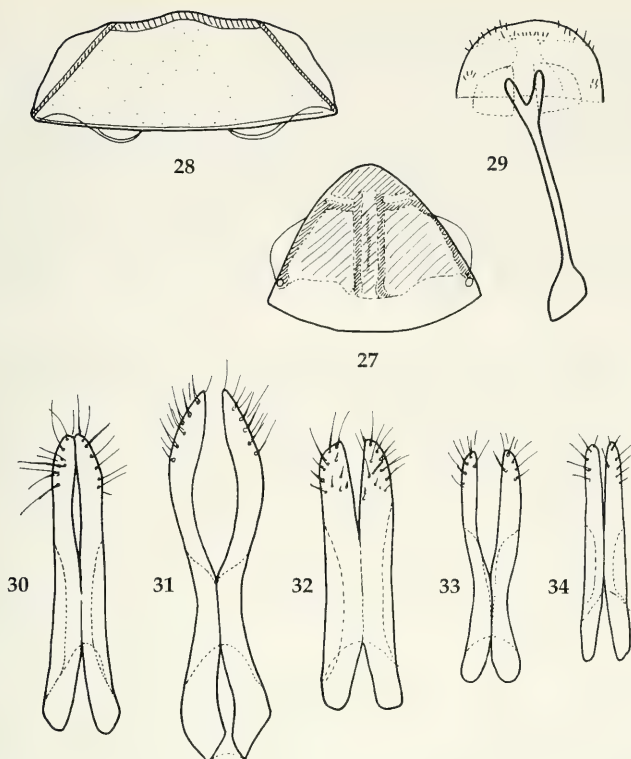
Material. England, Gloucester, 24.08.1966, Krauss (USNM); Austria, Wien, Heikertinger (USNM); Spain, Alija de la Ribera, 11.03.1984, T. Velasco (MBCI); Romania, Bucurest, Montandon (USNM); Byelorussia: Beresinskii preserv, 06.07.1980, A. Konstantinov (ZMBU); Minsk, 05.05.1977, A. Konstantinov (AKPM); Plestchinitsov, 08.07.1977, A. Konstantinov (ZMBU); Vitebsk distr., 15.09.1979, A. Konstantinov (AKPM); Vileika reg, 23.07.1984; the same place, 05.05.1991, A. Konstantinov (AKPM); Turov, 16.05., 1980, A. Konstantinov (ZMBU); Russia: Jaroslavl distr., 24.05.1926 (ZMMU); Smolensk distr., Temkino, 14.08.1979, A. Konstantinov (AKPM); the same place, 08.08.1980, A. Konstantinov (AKPM); Moscow distr., 04.1923 (ZMMU); Perm distr., Lysvinkii reg., 23.05.1963 (ZMMU); Volgograd, 02.06.1986, Komarov, (AKPM); Stavropol, 17.05.1923 (ZMAS); Far East, Barabash-Levada, 18.07.1982, Konovalov (AKPM); Caucasus: North Caucasus, Lagonaki, 21.06.1990, A. Konstantinov (ZMBU); Krasnaia Poliana, 14.06.1984, A. Konstantinov (AKPM); Abhasia, Pitzunda, 02.08.1983, A. Konstantinov (AKPM); Georgia, Hashuri, 22.07.1983, A. Konstantinov (AKPM); Armenia, Hosrov, 15.05.1988, (IZAE); Azerbaidzhan, Lerik, 18.05.1986, (IZAB); Iran, Trapezond, 28.05.1891, Eichler (ZMAS).

### Redescription

Body elongate. Elytra metallic blue or green. Pronotum cupreous, bronze or metallic green with bronze lustre. Pronotum and elytra different in color. Front and middle legs, metatibia, tarsi and first 5 antennal segments yellow. Metafemur and last 6 antennal segments dark brown or black. Antennal calli flat. Surface of frons with small wrinkles and tiny punctures. Pronotum with transverse and longitudinal furrows equally deep. Lateral sides straight in basal  $\frac{1}{3}$ . Pronotal puncturation extremely variable. Caucasian specimens have large and dense punctures, sometimes 3 or 4 running together. Punctural rows of elytra regular and slightly mixed at apex.

Length: 2.3-3.1 mm.





Figs 27-29. Female genitalia of *C. lamina* Bed. 27. VII tergite. 28. VII sternite. 29. VII and IX tergite, and tignum. Figs 30-34. Styli of *Crepidodera*. 30. *C. browni* Parry. 31. *C. lamina* Bed. 32. *C. nana* Say. 33. *C. obscuripes* Heik. 34. *C. violacea* Melsh.

Distribution: Europe, North Africa, Caucasus, Asia Minor, Siberia, Mongolia, Far East, China.

Host plants: *Salix alba*, *S. triandra*, *S. fragilis*, *S. caprea*, *S. viminalis*, *Populus nigra*, *P. tremula*.

Comments. M. Biondi (1990) reestablished the species status of *C. aureola* Foud. from Spain, which was previously considered as synonym of *C. fulvicornis* (Heikertinger & Csiki, 1939). The comprehensive study of specimens considered to be *C. aureola* have proven that they are *C. aurata*.

### *Crepidodera nigricoxis* Allard

Figs 40, 53

*Crepidodera nigricoxis* Allard, 1878: 17, 84.

*Chalcoides nigricoxis*, Gruев 1975: 90-93; Gruев & Tomov 1986: 273.

Material. Caucasus, Tuapse, 12.06.1982, A. Konstantinov (AKPM).

Redescription as for *C. aurata* except for the shape of aedeagus (Fig. 53).

Distribution: South East Europe, Caucasus.

Host plants: Unknown.

## *Crepidodera plutus* (Latreille)

Figs 13, 41, 54

*Altica pluta* Latreille, 1804: 7.

*Chalcoides plutus*, Heikertinger & Csiki 1939: 323; Shapiro 1965: 452; Mohr 1966: 247; Gruev & Tomov 1986: 274.  
*Crepidodera plutus*, Gressitt & Kimoto 1963: 774; Lopatin 1979: 226; Medvedev 1982: 276; Medvedev 1992: 568.

Material. Germany, Berlin (USNM); Austria: Neusiedlersee, 25.08.1969, M. Döberl (USNM); Edmundshof, 28.08.1969, M. Döberl (USNM); Wien, Heikertinger (USNM); Byelorussia, Hvoensk, 27.06.1980, A. Konstantinov (AKPM); Ukraine, Poltava, 13.06.1925, (IZUK); Russia: Krasnodar, 16.04.1985, Ohrimenko (ZMBU); Krasnodar Kuban' river, 18.06.1990, A. Konstantinov (AKPM); Far East, Amur, 31.05.1910, Soldatov (ZMAS); Vladivostok, 07.05.1958, Stepanov (ZMAS); Ussuriisk distr., Kamenushka, 21.08.1992, A. Konstantinov (ZMBU); Hanka, Kamen' Rybolov, 29.08.1992, A. Konstantinov (AKPM).

### Redescription

Body elongate, comparatively narrow. Dorsum metallic green or blue; often with green pronotum and blue elytra. Front and middle legs, metatibiae and all tarsi, 4th and basal part of 5th antennal segments yellow. Apex of 5th and following antennal segments, metafemur dark brown or black. Frons with longitudinal excavation above antennal calli. Bottom of excavation covered with large punctures. Pronotal transverse and longitudinal furrows shallow. Lateral sides straight in the basal  $\frac{1}{3}$ . Front angles comparatively short. Puncturation coarse. Elytral rows of large punctures regular. Diameter of punctures exceeding distance between rows. Intervals covered with small punctures and wrinkles.

Length: 1.9-2.8 mm.

Distribution: Europe, Caucasus, Asia Minor, Kazakhstan, Central Asia, Far East, China.

Host plants: *Salix daphnoides*, *S. spp.*, *Populus spp.*

### *Crepidodera sahalinensis*, spec. nov.

Figs 14, 42, 55

Types. Holotype: ♂, Sahalin, Gornozavodsk, 11.08.1992, A. Konstantinov (USNM). - Paratypes: 1♂, same data as holotype; 1♂, 1♀, Kunashir island, 16.07.1985, S. Saluk (1♂ ZMAS, rest in AKPM).

### Description

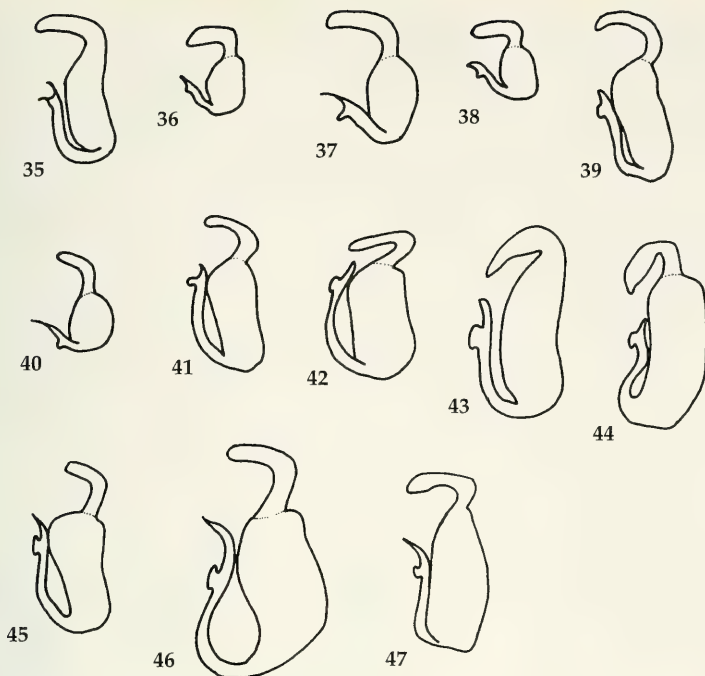
Body elongate, comparatively narrow. Dorsal surface metallic green with weak bronze lustre. Apices of pro- and mesotibiae, first 4 antennal segments yellow, remaining parts of tibiae dark brown. All femora, metatibia and last 7 antennal segments black. Antennal calli narrow, with shiny surface. Frons flat or slightly concave and densely covered with comparatively large punctures and transverse wrinkles. Occiput covered with much more shallow but longer wrinkles. Longitudinal furrows of pronotum deep, transverse one shallow. Lateral sides straight in basal  $\frac{1}{3}$ . Anterior angles comparatively small. Lateral margin narrow. Pronotal puncturation sparse and fine. Elytra parallel-sided. Striae regular on disk, but slightly mixed at apices. Punctures small, diameter on one less than distance between rows. Surface of intervals shiny, with tiny, sparse punctures without wrinkles.

Length: 1.9-2.1 mm.

Distribution: Known only from the type locality on Sahalin and Kunashir.

Host plants: *Salix* sp.

Comments. This species is similar to *C. plutus*, but can be easily distinguished by the wrinkles of the frons, the leg color, the shape and punctures of pronotum and the shape of aedeagus and spermatheca.



Figs 35-47. Spermatheca of *Crepidodera*. 35. *C. aurea* Geoffr. 36. *C. obscuripes* Heik. 37. *C. fulvicornis* F. 38. *C. japonica* Baly. 39. *C. aurata* Marsh. 40. *C. nigricoxis* All. 41. *C. plutus* Latr. 42. *C. sahalinensis*, spec. nov. 43. *C. lamina* Bed. 44. *C. picipes* Wse. 45. *C. ussuriensis*, spec. nov. 46. *C. nitidula* L. 47. *C. wittmeri* Doguet.

***Crepidodera lamina* (Bedel), comb. nov.**

Figs 1-7, 15, 26-29, 43, 56

*Chalcoides lamina* Bedel, 1901: 398; Heikertinger & Csiki 1939: 321; Heikertinger 1950: 113; Shapiro 1965: 452; Mohr 1966: 248; Gruev 1986: 275.

Material. Germany, Scheucherberg, 02.07.1973, Hebauer (USNM); Bohemia, Bichelov, Prochaska (USNM); Ukraine, Kodry, 18.07.1969 (ILPM); Russia, Krasnodar, 29.04.1979 (ZMAS); Kaluzhnaja st., 01.08.1981 (ZMAS); North West Caucasus, Tuapse, 29.06.1982, A. Konstantinov (AKPM), (ZMBU); Georgia, Akhaldaba, 12.07.1983, A. Konstantinov (ZMBU).

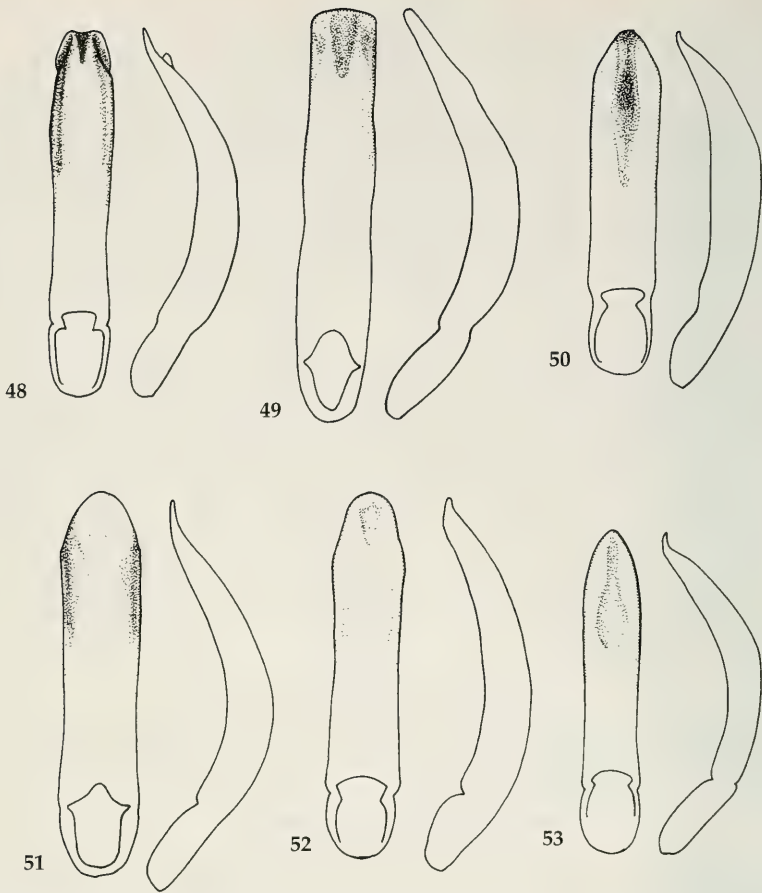
**Redescription**

Body wide, large. Dorsal surface metallic green, blue, golden or bronze. Antennae excluding last 3 segments, front and middle legs, metatibiae and tarsi yellow. Metafemora and last 3 antennal segments brown. Frons convex and shiny, densely covered with small punctures, without wrinkles. Pronotum with lateral sides straight in basal  $\frac{1}{3}$ . Posterior setiferous pores situated on small toothlike processes. Transverse and longitudinal furrows shallow. Puncturation large and sparse. Elytra with regular rows of large punctures, larger than pronotal punctures. Distances between rows covered with more or less large punctures.

Length: 2.7-3.8 mm.

Distribution: Central and South Europe, Caucasus, Turkey.

Host plants: *Populus tremula*, *Salix* sp.



Figs 48-53. Male genitalia of *Crepidodera*, ventral and lateral view. 48. *C. aurea* Geoffr. 49. *C. obscuripes* Heik. 50. *C. fulvicornis* F. 51. *C. japonica* Baly. 52. *C. aurata* Marsh. 53. *C. nigricoxis* All.

***Crepidodera gemmata* (Abeille), comb. nov.**

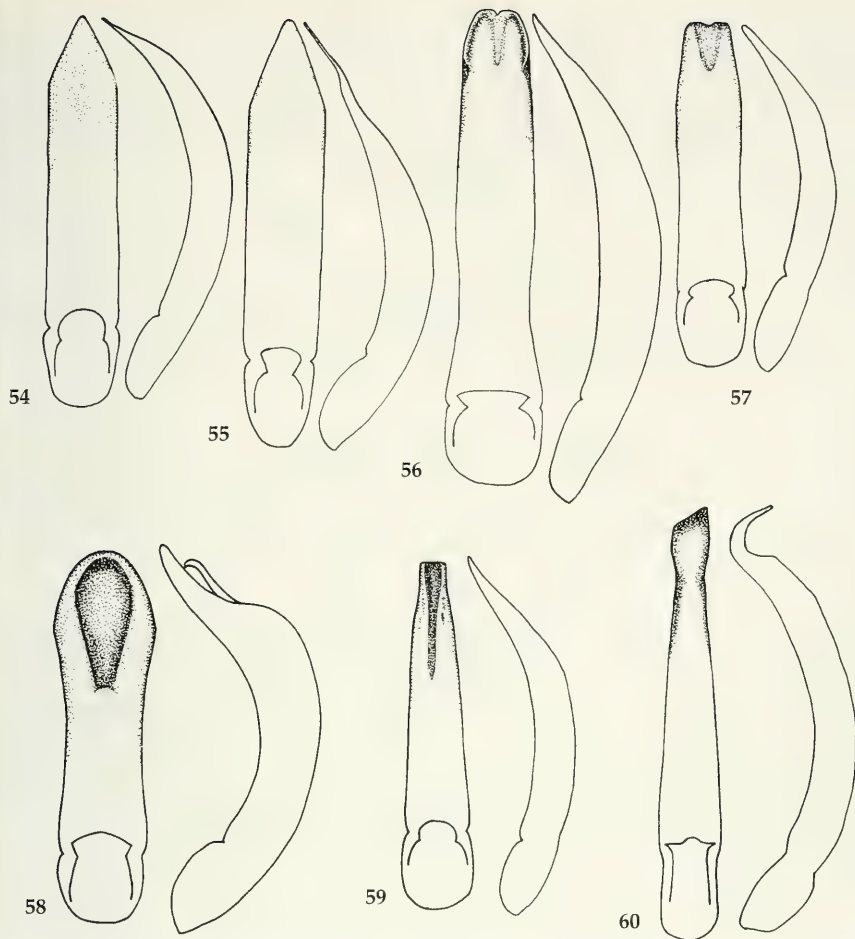
Figs 16, 57

*Chalcoides gemmata* Abeille, 1895: 402; Heikertinger 1950: 113.

Material. Algeria, Bom., Amouche Setif, 20.04.1987, M. Bergeal (AKPM).

**Redescription**

Body small, elongate. Dorsal surface greenish bronze, cupreous or golden. Antennae excluding last 3 segments, legs yellow. Last 3 antennal segments slightly fuscous. Frons flat, covered with deep, transverse wrinkles and large punctures. Pronotum with lateral sides straight in basal  $\frac{1}{3}$ . Transverse and longitudinal furrows deep. Puncturation large and dense. Elytra with regular rows of punctures, only second row sinuate apically. Elytral punctures larger than pronotal. Interstriae covered with small punctures.



Figs 54-60. Male genitalia of *Crepidodera*. 54. *C. plutus* Latr. 55. *C. sahalinensis*, spec. nov. 56. *C. lamina* Bed. 57. *C. gemmata* Abeil. 58. *C. picipes* Wse. 59. *C. ussuriensis*, spec. nov. 60. *C. nitidula* L.

Length: 2.0-2.7 mm.

Distribution: North Africa (Alger, Tunis).

Host plants: Unknown.

*Crepidodera picipes* (Weise)

Figs 17, 44, 58

*Chalcoides picipes* Weise, 1887: 192; Heikertinger 1950: 114.

*Crepidodera picipes*, Medvedev 1992: 586.

*Crepidodera mroczkowskii* Warchalowski, 1969: 230.

Material. Russian Far East: Habarovsk distr., Korfovskaja, 02.07.1982, O. Kabakov (ZMAS); Primorie, 23.06.1973, E. Matis (ILPM); Sahalin, pic Chehova, 14.08.1992, A. Konstantinov (AKPM).

## Redescription

Body wide. Dorsal surface metallic-blue with faint green lustre. Antennae, with exception of segments 2 and 3, all femora and metatibiae black. Antennal segments 2 and 3, pro- and mesotibiae, all tarsi yellow. Frons with oval excavation from above to antennal calli. Bottom of excavation covered with transverse wrinkles and small punctures. Sides of pronotum slightly curved in basal  $\frac{1}{3}$ . Transverse and longitudinal furrows deep with sharp margins. Pronotal punctures comparatively small. Elytral striae regular. Intervals wider than diameter of punctures.

Length: 2.5-3.2 mm.

Distribution: Russian Far East, Sahalin, Korea, China.

Host plants: *Salix* sp.

Comments. Gressitt & Kimoto (1963) apparently used this species name for *C. obscuripes* Heik. as shown by their drawing of the male genitalia (Gressitt & Kimoto 1963: Fig. 203b, p. 776). This may account for why A. Warchalowski (1969) described *C. picipes* again under the name *C. mroczkowskii*. The same opinion was expressed by L. Medvedev (1992).

### *Crepidodera ussuriensis*, spec. nov.

Figs 18, 45, 59, 61

Types. Holotype: ♂, Russian Far East, Ussurijsk distr., Kamenushka, 23.08.1992, A. Konstantinov (USNM). - Paratypes: 2♂♂, 1♀, same data as holotype (1♂ ZMAS, rest in AKPM).

## Description

Body narrow and elongate. Dorsal surface dark metallic blue, with slight green lustre. Antennae excluding segments 2 and 3, all legs except apices of tibia and tarsi, dark brown, apices of tibiae and tarsi and antennal segments 2 and 3 light brown. Fourth tarsal segments obscure. Frons with transverse furrow near antennal calli. Furrow margin near calli densely covered with punctures. Remainder of frons covered with small sparse punctures, shiny between punctures. Antennal calli much more rounded than calli of other species. Pronotum convex with lateral sides straight in basal  $\frac{1}{3}$ . Anterior angles rounded. Puncturation comparatively coarse and dense. Transverse furrow shallow, longitudinal furrows deep with acute margin. Elytra not parallel-sided, maximum width at apical  $\frac{1}{3}$ . Rows of punctures regular. Punctures large, their diameter greater than distance between rows. Intervals covered with tiny punctures and wrinkles.

Length: 2.2-2.6 mm.

Distribution: Known only from the type locality in the Far East.

Host plants: *Salix* sp.

Comments. This species is similar to *C. fulvicornis*, but it can be distinguished easily by the color of legs and antennae, shape of pronotum, and shape of aedeagus and spermatheca.

### *Crepidodera viridis* Gressitt & Kimoto

Fig. 19

*Crepidodera viridis*, Gressitt & Kimoto, 1963: 775.

Material. Far East, Dichun, 14.06.1978, Konovalov (AKPM).

## Redescription

Body wide. Color metallic green with pale golden lustre. Pronotum and head bronze. Antennae except segments 2, 3 and 4, middle of pro-, meso- and entire hind femur dark brown. Bases and tops of pro- and mesofemur, all tibiae and tarsi, antennal segments 2, 3 and 4 yellow. Frons prominent, dull with small wrinkles and punctures near antennal calli. Pronotum with lateral margin almost straight at

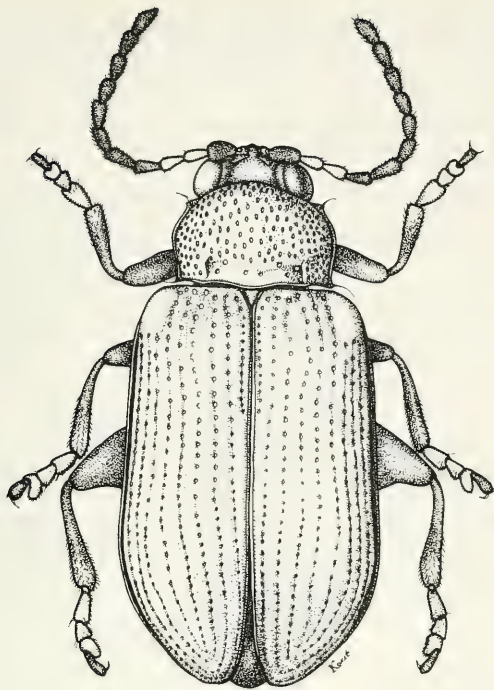


Fig. 61. *Crepidodera ussuriensis*, spec. nov., dorsal view.

basal  $\frac{1}{3}$ . Anterior angles prominent, sharp. Transverse furrow shallow. Longitudinal ones deep. Puncturation dense and coarse. Elytra with regular rows of punctures. Size of punctures slightly larger than size of pronotal punctures. Distances between punctures greater than diameter of punctures. Each interval with 2 rows of small punctures.

Length: 4.1 mm.

Distribution: W. China, Russian Far East.

Host plants: *Salix* sp.

***Crepidodera nitidula* (Linnaeus), comb. nov.**

Figs 20, 46, 60

*Chrysomela nitidula*, Linnaeus, 1758: 373.

*Chalcoides nitidula*, Heikertinger & Csiki 1939: 322; Heikertinger 1950: 109; Shapiro 1965: 452; Mohr 19656: 248; Gruév & Tomov 1986: 276.

Material. England, Ongar, 29.05.1949, D. F. Buck (USNM); Germany, Hildesheim, Rautenberg (USNM); Belyorus-sia, Mogilev distr., Orekhovka, 09.10.1978, M. Moroz (AKPM), Russia: Smolensk, 05., (ZMAS); Riasansk distr., 13.06.1915, (ZMAS); Iaroslavl distr., 05., 06., 08. 1928 (ZMAS).

**Redescription**

Body large, comparatively wide. Pronotum and head greenish or coppery bronze. Elytra metallic blue or violet. Metafemora and last 4 antennal segments brown. Front and middle legs metatibiae and tarsi, first 7 antennal segments yellow. Frons flat, dull, densely covered with large punctures. Trans-

verse and longitudinal furrows not deep, but with sharp margins. Punctural rows of elytra mixed at apices. Diameter of punctures larger than distances between rows. Intervals covered with small punctures and wrinkles.

Length: 2.9-3.7 mm.

Distribution: North and Middle Europe.

Host plants: *Populus tremula*, *P. alba*, *P. balsamifera*, *Salix cinerea*.

### *Crepidodera wittmeri* (Doguet), comb nov.

Figs 21, 47

*Chalcoides wittmeri* Doguet, 1976a: 92.

Material. Iran, Assalam, 1.300 m, 10.05.1970, Wittmer, coll. Paratype ♀ (SDPM); the same data as paratype, ♀ (NHBM).

#### Redescription

Body wide, oval. Metallic blue, pronotum with faint green lustre. Pro- and mesotibiae, and tarsi, first 5 antennal segments yellow. Pro- and mesofemur, metatibia brown, metafemur black. Antennal segment 6 light brown. Antennal calli with impression separating them from frons. Frons densely covered with wrinkles near antennal calli, remainder of frons with small punctures, shiny. Pronotum with lateral margins straight in basal  $\frac{1}{3}$ . Transverse and longitudinal furrows deep. Punctural rows of elytra regular. Diameter of punctures almost equal to distances between rows. Intervals covered with small punctures and shallow wrinkles.

Length: 2.9-3.1 mm.

Distribution: Iran.

Host plants: Unknown.

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